

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1-22. (cancelled)

23. (new) An energy management system for controlling the temperature of a fuel cell system supplying power to a load, comprising: a fuel cell stack; an air supply providing air to said fuel cell stack; a water supply; a hydrogen supply; a heater that is connected to an output of said fuel cell stack and arranged to warm said stack and said water supply; and a controller that controls said hydrogen supply and said air supply to power said heater to warm said fuel cell stack and said water supply while said fuel cell system is not supplying power to a load.

24. (new) The energy management system of Claim 23 wherein said heater is a resistive heater.

25. (new) The energy management system of Claim 23 further comprising: a pressure sensor that generates a hydrogen pressure signal for said hydrogen supply and that is connected to said controller.

26. (new) The energy management system of Claim 25 further comprising: a stack temperature sensor that is connected to said controller and that generates a stack temperature signal.

27. (new) The energy management system of Claim 26 wherein said controller determines whether heating is necessary based on said stack temperature if said hydrogen pressure signal exceeds a first pressure value.

28. (new) The energy management system of Claim 27 wherein said controller initiates said air supply and said hydrogen supply if heating is necessary until said stack temperature signal exceeds a first stack temperature value.

29. (new) The energy management system of Claim 26 further comprising: an ambient temperature sensor that generates an ambient temperature signal; and a water tank sensor that generates a water temperature signal.

30. (new) The energy management system of Claim 29 wherein said controller uses said stack temperature signal, said ambient temperature signal and said water temperature signal to access a lookup table to determine whether heating is necessary when said pressure signal does not exceed a first pressure value.

31. (new) The energy management system of Claim 30 further comprising: a hydrogen tank level sensor that generates a tank level signal.

32. (new) The energy management system of Claim 31 wherein said controller initiates said air supply and said hydrogen supply if heating is necessary and if said tank level signal exceeds a first tank level value.

33. (new) The energy management system of Claim 32 wherein said controller continues heating until said stack temperature signal exceeds a first stack temperature value.

34. (new) The energy management system of Claim 31 wherein said controller activates a purge, drains water from said water supply, and inhibits vehicle startup if said tank level signal does not exceed a first tank level value.

35. (new) An energy management method, for controlling the temperature of a fuel cell system supplying power to a load, comprising: providing a fuel cell stack, an air supply, a water supply, a hydrogen storage device, a hydrogen supply valve, a heater that is connected to an output of said fuel cell stack, and a controller; connecting said controller to said hydrogen supply, said air supply and said heater; and while said system is not satisfying said load, controlling said hydrogen supply valve and said air supply to operate said heater to generate heat that warms said fuel cell stack and said water supply.

36. (new) The method of Claim 35 wherein said heater is a resistive heater.

37. (new) The method of Claim 35 further comprising: generating a hydrogen pressure signal of said hydrogen supply using a pressure sensor that is connected to said controller.

38. (new) The method of Claim 37 further comprising: connecting a stack temperature sensor to said controller; and generating a stack temperature signal using said stack temperature sensor.

39. (new) The method of Claim 38 further comprising: determining whether said pressure signal exceeds a first pressure value; and determining whether heating is necessary based on said stack temperature if said pressure signal exceeds said first pressure value.

40. (new) The method of Claim 39 further comprising: initiating said air supply and said hydrogen supply if heating is necessary until said stack temperature signal reaches a first stack temperature value.

41. (new) The method of Claim 37 further comprising: connecting an ambient temperature sensor and a water temperature sensor to said controller; generating an ambient temperature signal using said ambient temperature sensor; and generating a water temperature signal using said water temperature sensor.

42. (new) The method of Claim 41 further comprising: using said stack temperature signal, said ambient temperature signal and said water temperature signal to access a lookup table to determine whether heating is necessary if said pressure signal does not exceed a first pressure value.

43. (new) The method of Claim 42 further comprising: connecting a tank level sensor to said controller; and generating a tank level signal using a hydrogen tank level sensor.

44. (new) The method of Claim 43 further comprising: initiating said air supply and said hydrogen supply if heating is necessary until said stack temperature reaches a first stack temperature value and if said tank level signal exceeds a first tank level value.

45. (new) The method of Claim 43 further comprising: activating a purge, draining water from said water storage device, and inhibiting the supplying power to said load if said tank level signal does not exceed a first tank level value.

46. (new) The method of claim 35 wherein said air supply is a blower, said controller starts said blower and opens a valve of said hydrogen supply to operate said heater.